Transuranic Waste and the Waste Receiving and Processing Facility

Restore the River Corridor • Transition the Central Plateau • Prepare for the Future

Workers load 55-gallon drums of transuranic waste into a "TRUPACT" shipping container.

Prior to each shipment leaving Hanford, the Washington State Patrol and/or the Oregon Department of Transportation conduct a thorough safety inspection.

A shipment of transuranic waste leaves the Hanford Site, bound for the Waste Isolation Pilot Plant in New Mexico. Each transport container (TRUPACT) holds 14 55-gallon drums of waste.

Background

Transuranic (TRU) waste is contaminated equipment and debris with long-lived radioactive potency and is dubbed transuranic because its radioactive isotopes are above uranium in the periodic table of elements. "Suspect" TRU is waste that has not yet been characterized as such, but because of past operations and disposal practices, it is possible that the waste contains TRU constituents in a sufficient concentration to be designated TRU waste. Currently, Hanford has over 80,000 drum-equivalents of "suspect" TRU waste, generated since 1970, stored above and below ground. About 37,000 drums and 1,200 boxes of suspect TRU waste is buried in retrievable storage in the low-level burial grounds on the Central Plateau in the middle of the Hanford Site.

In addition, a number of the 800 individual non-tank farm waste sites on the Central Plateau may contain transuranic constituents, such as plutonium, that must be recovered and processed for disposal at the Waste Isolation Pilot Plant (WIPP) in New Mexico.

As we proceed with Hanford cleanup (taking down buildings, remediating waste sites and retrieving the suspect TRU waste), more of these wastes will be generated and will need to be characterized, possibly treated, and disposed.

Treatment, Storage and Disposal Progress

The Waste Receiving and Processing facility (WRAP) is a unique, 51,300 square-foot facility for inspecting, treating and repackaging drums and small boxes of mixed low-level waste, and for processing TRU waste in preparation for permanent disposal. Hanford is currently processing post-1970 TRU waste stored above ground. From a control room, an employee characterizes the contents of drums containing hazardous and radioactive waste by using an x-ray and measuring radioactivity. Once characterization is finished, the drum is properly labeled and prepared for transportation to permanent disposal. Operations at WRAP ensure that the waste meets the acceptance criteria of the appropriate disposal facility.

TRU waste is either stored in the Central Waste Complex (CWC), storage trenches in the ground, or at T Plant. The CWC includes numerous warehouse-type buildings that provide storage of tens of thousands of drums of waste. Depending on the characterization of the drum, it may also be stored in a trench surrounded by dirt to provide additional shielding. T Plant temporarily stores small quantities of remote-handled TRU waste and will soon be able to process it.

In recent months, we have focused on increasing our shipments to WIPP. By accelerating the TRU waste disposal effort, we will reduce the costs associated with continued maintenance and surveillance of TRU waste storage containers and facilities.

Accelerated Cleanup

As outlined in the Hanford Performance Management Plan, we will accelerate retrieval of the post-1970 suspect TRU waste. Accelerating these operations will be possible by deploying mobile TRU waste processing systems, which can provide an additional capacity to certify for shipment up to 4,000 drums per year for disposal at WIPP. The mobile systems, provided and funded by another U.S. Department of Energy (DOE) field office, will allow us to significantly increase our Hanford TRU shipping rates over the next eight years to WIPP, and be used to process TRU waste from other DOE sites with small-quantities of waste. The mobile systems will also allow us to accelerate retrieval and shipping of Hanford's contact-handled TRU waste drums, finishing years ahead of the previously planned dates.

A drum of transuranic waste is run through an x-ray machine at the Waste Receiving and Processing Facility.

X-ray photos of contents in 55-gallon drums.

For more information

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